



Wholesale Electricity Market

Procedure Change Proposal No:
AEPC_2024_13

WEM Procedure: Dispatch Algorithm Formulation

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Australian Energy Market Operator Ltd ABN 94 072 010 327

Notice of call for submissions on Procedure Change Proposal

Clause 2.10.7 of the Wholesale Electricity Market Rules (WEM Rules)

Closing date for submissions on Procedure Change Proposal

28 November 2024

This notice informs all Rule Participants and interested parties that AEMO has published a Procedure Change Proposal in respect of the WEM Procedure: Dispatch Algorithm Formulation. AEMO invites submissions on this Procedure Change Proposal, including any alternative options or drafting you consider may improve the proposed WEM Procedure or better meet the Wholesale Market Objectives set out in section 122(2) of the *Electricity Industry Act 2004 (WA)* (and clause 1.2.1 of the WEM Rules).

A Procedure Change Submission may be made using the Procedure Change Submission form maintained on the Coordinator's Website in accordance with clause 2.9.4 of the WEM Rules and also the WEM Website. All submissions must be provided in PDF or Microsoft Word format by email to WA.MarketDevelopment@aemo.com.au. Please send any queries about this consultation to the same email address.

AEMO is not obliged to consider submissions received after the closing date and time. Any late submissions should explain the reason for lateness and the detriment to person making the submission if AEMO does not consider their submission.

All submissions will be published on the WEM Website, with the exception of any content that is identified as confidential. A person making a submission must identify any parts of the submission that they believe should remain confidential, and explain why that content cannot be published. AEMO may still publish the information if it does not consider it to be confidential, but will consult with the relevant parties before doing so.

Procedure change summary

<p>Procedure Name:</p>	<p>AEPC_2024_13</p>
<p>What is proposed to be changed?</p>	<p>AEMO is proposing the following amendments in response to the Frequency Co-optimised Essential System Services (FCESS) Cost Review Amending Rules:</p> <ul style="list-style-type: none"> • Various amendments throughout paragraph 2 to outline how the updated tiebreak process is represented in the Dispatch Algorithm • Consequential amendments to Table 5 to include two new tiebreak Constraint Violation Quantity variables. • New Appendix G, to outline the process for determining Facility Tiebreak Numbers and the priority order to give effect to the new tiebreaking rules. <p>Other Amendments are also being proposed, including:</p> <ul style="list-style-type: none"> • Minor wording amendments to improve clarity. • Separating Active Fast Start Facilities with a Fast Start Target Mode of 0 to 4 under paragraphs 3.1.2(b) and 3.1.2(c) to better reflect the operating behaviour of these Facilities. • Replacing “Alternative Maximum STEM Price” with “Energy Offer Price Ceiling” under paragraph B.1.2, following removal of the concept from the WEM Rules.
<p>Why are the changes being made?</p>	<p>Changes are being made to:</p> <ul style="list-style-type: none"> • align the WEM Procedure with the WEM Rules; • improve the WEM Procedure based on operational experience.

What are the anticipated outcomes and impact?	Amendments are to ensure alignment with amendments to the WEM Rules. Impact to Rule Participants is low.
How do the changes achieve the WEM Objectives?	Amendments achieve the Wholesale Market Objective 1.2.1(a) by improving economic efficiency of electricity and electricity related services in the South West interconnected system.

Contents

Notice of call for submissions on Procedure Change Proposal	2
Procedure change summary	3
1. Procedure Change Process	6
1.1. Initiating the Procedure Change Process	6
1.2. WEM Procedure Development	6
1.3. Procedure Change Proposal timeline	6
2. Background	7
2.1. Regulatory requirements	7
2.2. Context for this consultation	8
3. Proposed procedure change	8
3.1. Detail of the proposed procedure change	8
4. Procedure Change Submissions deadline	10

1. Procedure Change Process

1.1. Initiating the Procedure Change Process

In accordance with clause 2.10.1 of the WEM Rules, AEMO may initiate the Procedure Change Process by developing a Procedure Change Proposal.

AEMO has published this Procedure Change Proposal in accordance with clause 2.10.5A.

1.2. WEM Procedure Development

In accordance with clause 2.10.3 of the WEM Rules, if an Amending Rule requires AEMO to develop new WEM Procedures or to amend or replace existing WEM Procedures, then AEMO is responsible for the development, amendment, or replacement of WEM Procedures so as to comply with the Amending Rule.

Clause 2.9.3 of the WEM Rules states that WEM Procedures:

- (a) must:
 - (i) be developed, amended or replaced in accordance with the process in the WEM Rules;
 - (ii) be consistent with the Wholesale Market Objectives; and
 - (iii) be consistent with the WEM Rules, the *Electricity Industry Act (WA)* and the WEM Regulations; and
- (b) may be amended or replaced in accordance with section 2.10 of the WEM Rules and must be amended or replaced in accordance with section 2.10 of the WEM Rules where a change is required to maintain consistency with Amending Rules.

The Wholesale Market Objectives are outlined in section 122(2) of the *Electricity Industry Act 2004* (WA) and are repeated in clause 1.2.1 of the WEM Rules.

1.3. Procedure Change Proposal timeline

AEMO's indicative timeline for this consultation is outlined below. Dates may be adjusted depending on the number and complexity of issues raised in submissions and any meetings with stakeholders.

Process Stage	Indicative date
Publication of Procedure Change Proposal	31 October 2024
Closing date for submissions on Procedure Change Proposal	28 November 2024
Publication of Procedure Change Report	5 December 2024
Proposed commencement of WEM Procedure	5 December 2024

Before the closing date for submissions, stakeholders may request a meeting with AEMO to discuss the issues and proposed changes raised in this Procedure Change Proposal.

2. Background

2.1. Regulatory requirements

The purpose of the WEM Procedure: Dispatch Algorithm Formulation (Procedure), is to document:

- (a) the Dispatch Algorithm used by AEMO for the purpose of the Central Dispatch Process and setting Market Clearing Prices and the mathematical formulation of the Dispatch Algorithm, including **[clause 7.2.5(a)]**:
 - (i) the calculation of the required quantity of Contingency Reserve Raise **[clause 7.2.5(a)(iii)]**;
in a form that:
 - (ii) sets out the form, scope and construction of each type of Constraint Equation **[clause 7.2.5(a)(v)]**;
 - (iii) describes and quantifies the mechanism by which different Constraints are taken into account and prioritised, including in accordance with clauses 3.12.2 and 7.6.25 **[clause 7.2.5(a)(vi)]**; and
 - (iv) AEMO reasonably considers will enable a third party, such as the Market Auditor or the Economic Regulation Authority, to replicate the results of the Dispatch Algorithm by using the same inputs **[clause 7.2.5(a)(vii)]**;
- (b) the processes to be followed by AEMO and Market Participants in accounting for Inflexible Facilities **[clause 7.2.5(c)]**;
- (c) the methodology AEMO will use, and any assumptions it may be required to make, to determine the Market Clearing Prices during AEMO Intervention Events under clauses 7.11C.7, 7.11C.8 and 7.11C.10. The methodology must, wherever reasonably practicable **[clause 7.11C.11]**:
 - (i) be consistent with the principles for the determination of Market Clearing Prices set out in section 7.11A **[clause 7.11C.11(a)]**; and
 - (ii) enable AEMO to determine and publish such prices in accordance with the applicable timeframes for the publication of the Market Clearing Prices under these WEM Rules **[clause 7.11C.11(b)]**;
- (d) the processes to be followed by AEMO for the relaxation of Constraints under clause 7.2.6 **[clause 7.2.8]**;
- (e) situations that are deemed to be significant for the purposes of clause 7.6.24(b). **[clause 7.6.27]**;
- (f) the method to be used by AEMO to determine Facility Tiebreak Numbers under clause 7.5.17(a) **[clause 7.5.18]**.

The current version of the WEM Procedure commenced on 28 March 2024.

2.2. Context for this consultation

AEMO has commenced the Procedure Change Process to propose amendments to the Procedure, as a result of the FCESS Cost Review Amending Rules¹.

Energy Policy WA has published the FCESS Cost Review Amending Rules, which seek to reduce costs incurred in the FCESS market. These Amending Rules are intended to reduce FCESS costs that have increased significantly under the Security Constrained Economic Dispatch market, in comparison to similar services in the Balancing Market, prior to 1 October 2023.

AEMO considers that the proposed amendments to the Procedure will ensure consistency with the Amending Rules.

While amending the Procedure to align with the FCESS Cost Review Amending Rules, AEMO identified other minor amendments that were required to be made to improve clarity and alignment with operational experience.

3. Proposed procedure change

3.1. Detail of the proposed procedure change

Amendments have been made to the Procedure to align with changes to the WEM Rules under the FCESS Cost Review Amending Rules. These updates include:

- Amending paragraph 1.1.4(e) to ensure consistency with the amendments to clause 7.6.27 of the WEM Rules.
- Deleting paragraph 1.1.4(f) to ensure consistency with the amendments to clause 7.6.27 of the WEM Rules.
- Adding a new paragraph 1.1.4(f), following new clause 7.5.18 of the WEM Rules.
- Deleting the definition for “Price-Tied Tranche” under Table 1 of the Procedure. The definition is no longer required following the inclusion of paragraphs 2.1.12 and 2.1.13, which represent situations in the Dispatch Algorithm that are considered Price-Tied or Price-Tied Tranches.
- Adding paragraph 2.2.43, representing the Priority Order for dispatch where the Dispatch Algorithm encounters tied Price-Quantity Pairs for a Market Service in Real-Time Market Submissions.
- Amending paragraph 2.3.7, to update the Tiebreaking Variables in accordance with amendments to clause 7.5.15 of the WEM Rules.
- Adding paragraphs 2.4.45 and 2.4.46, 2.4.47 and 2.4.48 to represent the Tiebreaking Constraints applied for each relevant Market Service to avoid degenerate solutions in accordance with the requirements of clauses 7.5.15 and 7.5.16 of the WEM Rules. These Constraints replace the Tiebreaking Constraints previously represented under paragraphs 2.4.33 and 2.4.34, which are now

¹ <https://www.wa.gov.au/government/publications/energy-policy-wa-has-released-the-exposure-draft-of-fcess-cost-review-amendments-consultation>

represented as [BLANK]. AEMO has not deleted these paragraphs due to certification testing being linked to paragraph references within the Procedure.

- Amending the section references and CVP Values for the TBSlack1 and TBSlack1 Constraint Violation Quantity variables under Table 5, to represent the new Constraints added under paragraphs 2.4.45 and 2.4.46.
- Adding new Constraint Violation Quantity variables under Table 5 for TBSlack3 and TBSlack4 to represent new Constraint equations added under paragraphs 2.4.47 and 2.4.48.
- Amending to the preamble for paragraph 3 to remove reference to clause 7.6.23 of the WEM Rules, following the deletion of this clause. The paragraph is updated to reference new clauses 7.5.15 to 7.5.18 of the WEM Rules and the associated paragraphs within the Procedure which document the priority order.
- Adding paragraph G.1 to outline the process in which AEMO will determine Facility Tiebreak Numbers for the purposes of clause 7.5.17(a) of the WEM Rules. This is added to the Procedure in accordance with clause 7.5.18 of the WEM Rules.
- Adding paragraph G.2 to outline how the Facility Tiebreak Number under paragraph G.1 is applied in the Dispatch Algorithm when avoiding Degenerate Solutions caused by any tied Price-Quantity Pairs for a Market Service in Real-Time Market Submissions, in accordance with the requirements of clause 7.5.15 of the WEM Rules.

While making the above listed amendments as a result of the FCESS Cost Review Amending Rules, AEMO has taken the opportunity to make other amendments to the Procedure as follows:

- Minor amendments to formulas under paragraphs 2.4.8, 2.4.9 and 2.4.10 to reflect “regulation_raise” and “contingency_raise” as opposed to “regr” and “conr”.
- Replacing “marginal value” with “shadow price” throughout the Procedure. Both terms have the same meaning and in AEMO’s interactions with stakeholders, it appears “shadow price” is more commonly understood. As such, AEMO has made this change to ensure consistency in terminology and to improve understanding.
- Adding paragraph 3.1.2(c) to separate Active Fast Start Facilities with a Fast Start Target Mode of 0 to 4 and Constraint Equations that do not apply to these Facilities from paragraph 3.1.2(b). AEMO has made this change, as an Active Fast Start Facility in Fast Start Target Mode 5 effectively operates like a normal Facility and therefore, the Constraint Equations that do not apply to this type of Facility differs from those with a Fast Start Target Mode of 0 to 4.
- Amending paragraphs 3.2.2(c) and 3.2.2(d) in accordance with the above listed changes to paragraphs 3.1.2(c) and 3.1.2(b).
- Replacing “Alternative Maximum STEM Price” with “Energy Offer Price Ceiling” under paragraph B.1.2, following removal of the concept from the WEM Rules. AEMO believe that Energy Offer Price Ceiling fulfils the same purpose of representing the maximum price of energy.

AEMO has published a draft version of the Procedure incorporating the changes AEMO proposes for consultation. A clean version and a version with changes marked up are available at:

<https://www.aemo.com.au/energy-systems/electricity/wholesale-electricity-market-wem/procedures-policies-and-guides/procedures/ongoing-procedure-change-proposals>.

4. Procedure Change Submissions deadline

Submissions relating to this Procedure Change Proposal must be made in accordance with the accompanying notice of call for submissions by 5.00 pm (AWST) on 28 November 2013.